Vis/NIR Status Report

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L1B Vis/NIR products are in excellent shape, with no significant liens.

- Radiance error bars are less than 1% within the 9 pixels of each channel, 10% absolute (system requirement is 20%). See ADF-590.

- Geolocation has been validated to ~2 km.

- Primary QA parameters are good.
  - –radiance, offset, gain, and associated errors are properly calculated and reported.
  - –instrument temperatures correctly reported.
  - –sun and spacecraft geometries and warning flags (including sun-glint) correctly reported.
  - –land fraction qualitatively correct (have not checked it quantitatively).
  - –granule-summary fields (meta-data) correct.

Improvements to expect in future L1B versions:

- Improved scene diagnostics. The parameters bright_index and inhomo_index are empirical measures of brightness and variability within IR footprints, which will be proxies for more accurate L2 cloud flags. Currently, higher values only imply higher radiances and scene variability, respectively.

- Elimination of unused fields. The following data fields are meaningless and will be eliminated. (They currently contain fill values of either 0.0 or –9999.0.):
  - –rad_unc (replaced by NeN).
  - –rad_unc_stats (deemed not useful).
  - –offset_fit_dev and gain_fit_dev (use offset_err and gain_err instead).

- More accurate validation of geolocation.

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- Low-numbered detectors in Channel 4 have anomalously low radiances for the first ~tens of samples in each scanline. Until analysis is complete, ignore Ch. 4 values in the first 3 IR footprints of each scanline.

Deliverables from Pre-Launch Plans

On Schedule!

Items completed:

- Production of images as needed to support AIRS activities.
- Report on instrument stability and noise levels (ADF-579).
- Vicarious calibration with field data (ADF-590).
- First geolocation and internal co-registration (ADF-579).
- First co-registration with the IR (ADF-579).
- Vis/NIR cloud flag over ocean.

Open items promised for now or the near future:

- Cloud flag over land.
- Validation of cloud detection against local meteorological data and ARM-CART data.
- Improved validation of geolocation and co-registration.